

NAREA Awards

Outstanding Master's Thesis Award

An Analysis of Farmer Mac Prepayment Penalty Designs

Brian M. Brinch

Pennsylvania State University
Advisor: Jeffrey Stokes

Title VII of the Agricultural Credit Act of 1987 established the Federal Agricultural Mortgage Corporation better known as Farmer Mac. As a government sponsored enterprise, Farmer Mac is a federally-chartered corporation charged with providing and regulating a secondary market for agricultural real estate loans. Like any financial intermediary, Farmer Mac faces numerous risks including interest rate risk, default risk, and prepayment risk. Interest rate risk is embodied in the reinvestment and refinancing functions of Farmer Mac. Default or credit risk stems from mortgagors' cessation of loan payments while prepayment risk occurs when mortgagors repay their loans ahead of schedule. Unlike most residential mortgage-backed securities, Farmer Mac agricultural mortgage-backed securities have prepayment penalties. To quantify the impact of prepayment penalties on the cost of funding loans, prepayment behavior,

and agricultural mortgage-backed security value, an analytic model is developed and numerically solved using path-wise stochastic simulation and dynamic programming. The results suggest prepayment penalties currently being used by Farmer Mac reduce agricultural mortgage-backed security yields considerably relative to not charging prepayment penalties. Presumably, lower yielding agricultural mortgage-backed securities imply more competitive loan pricing. Even with prepayment penalties in place however, it can be advantageous for profit maximizing mortgagors to optimally prepay or even default on agricultural mortgages. The model is used to quantify prepayment and credit risk by valuing the embedded options in mortgages, namely, the right of the mortgagor to prepay and to default. These options are shown to represent a considerable proportion of the total value of agricultural mortgage-backed securities.

Master's Thesis Award of Merit

Using Land Allocation Model to Assess the Welfare Implications of New York State's Conservation Reserve Enhancement Program

Laura M. Jaroszewski

Cornell University
Advisor: Gregory Poe

This thesis develops a conceptual framework for assisting policymakers in the development of a 20,000 acre Conservation Reserve Enhancement Program (CREP) for New York State, and uses this framework to assess New York's 1998 draft CREP proposal relative to other program designs. A linear programming model with the objective of maximizing net social benefits per dollar

expended was constructed to determine the most efficient allocation of land among the program's designated regions and conservation practices. An important innovation of this model is that the likelihood of landowner participation at different rental rates is directly incorporated into the optimization framework.

When regional and practice constraints are not im-

posed, the program's annual net returns are \$817,607, or roughly \$41 per acre. Under this specification, land is planted exclusively to trees in five of New York's 11 agricultural regions. It is demonstrated that the land allocation, net returns, and budgetary costs are substantially affected by the addition of institutional constraints, the level

of farmers' awareness of the program, participation rates, budget constraints, and other assumptions underlying the model. In particular, the draft CREP proposal that requires land to be allocated across all agricultural regions and eight conservation practices spreads benefits across the state but decreases total net benefits by as much as 96%.

Master's Thesis Award of Merit

An Econometric Analysis Of The Determinants Of Off-Farm Labor Participation And Farmer Exit Decisions Among U.S. Farm Families, 1977–1998

Adetokunbo B. Oluwole

Pennsylvania State University
Advisor: Jill Findeis

The structural change that has characterized U.S. agriculture, especially in the past four decades, has resulted in the emergence of fewer but, on average, larger farms. The resultant decline in farm employment has elicited labor adjustments by farm households. This study investigates the determinants of off-farm labor participation decisions of American farm families and also analyzes factors that influence off-farm migration. The sample for the study consists of married couples in farm households, using data from the March Current Population Survey (March CPS) for the period 1977 to 1998, inclusive. Maximum likelihood estimation methods are used for the analyses of off-farm work participation and farmer exit decisions among farm men and women, both for the U.S. overall and by region within the U.S.

The estimated off-farm work participation models show that the hypothesis that decisions to work off-farm are independently made by U.S. farm couples should be rejected. Contrary to earlier studies of wage work participation of farm families, this study finds that men, like women, are influenced in their labor allocation decisions by the number of children in the household. Finally, demographic variables are shown to be key determinants whereas agricultural policy variables (e.g., direct payments and supported output prices) were not found to be as important for these decisions. Findings from this study suggest that appropriate policies be strengthened to enhance the ability of farm family members to be gainfully employed in the off-farm labor market, since off-farm earnings have become such an integral part of farm family income.

Honorary Life Member

This award recognizes a member who has actively participated in the affairs of the Association and, while maintaining an active interest in their profession, has recently retired from the formal professional position that comprised the major reason for their involvement in the Association.

Dale K. Colyer

Dale Colyer has been a faculty member at West Virginia University since 1970. After receiving his M.S. in Agricultural Economics with Honors from the University of Illinois, Dale began his career in the U.S. Army in which he was, appropriately, a communications specialist. Since that time he has published more than 314 articles in many venues and several nations. He has taught courses in: Agricultural Prices, Economic Development,

Agricultural Economic Development, Project Analysis, Production Economics, Agricultural Finance, Agricultural Policy, Mathematical Economics, Agricultural Statistics, Farm Management, Applied Econometrics, Agricultural Economics and Economic Principles, among others.

Following his Ph.D. in Economics from the University of Wisconsin, Dale began his academic career at the

University of Missouri, where he stayed for eight years before coming to West Virginia. He has conducted research in many countries, relating to: crop production, livestock production, marketing, farm machinery selection, land markets, rural development, international economic development, land use policy, land taxes, inter-

national trade, and returns to agricultural research, to which he appears to have been a significant contributor.

His service to this Association, so far, includes: President, Executive Committee member, Journal editor and he was recognized as the Association's Outstanding Member in 1983.

Distinguished Member Award

This award recognizes a member who has "made outstanding contributions to the Association, in the region and the profession." This award recognizes "significant recent professional achievements in the context of an overall meritorious record."

David R. Lee

David R. Lee is currently a professor of Applied Economics and Management at Cornell University, with joint appointments in: Conservation and Sustainable Development; International Agriculture and Rural Development; and Latin American Studies. David received a B.A. in Anthropology from Amherst College and his Master's and Ph.D. are from the University of Wisconsin in Agricultural Economics. He recently has been a visiting professor in The Netherlands, Slovakia, and Honduras.

David has conducted wide-ranging research regarding: food and agricultural policy, development economics, international trade, sustainable agricultural systems, and agricultural research and technology policy. He has published more than 150 research pieces, including four

books or book-length manuscripts. He has taught in several countries, in several languages, courses including: International Trade and Finance, Agroecosystems, Economic Development and the Environment, Agricultural Trade Policy, Sustainable Development, and Agricultural Development. He has advised more than 75 graduate students including 36 as major advisor. The quality of his advising is indicated by the fact more than 25% of his major advisees have won regional or national thesis awards.

David's contributions to the Association include: President, Member of the Editorial Council, Board of Directors, Chair and member of the Master's Thesis Awards Committee. He has been an active member of the Association for 19 years.

Journal Article of the Year for 2000

Evaluating the Economic Impacts of Regional Milk Pricing Authorities: The Case of the Dairy Compacts

Kenneth W. Bailey

Congress consented to the creation of the Northeast Interstate Dairy Compact in the 1996 Federal Agriculture Improvement and Reform Act. Interest is now growing in expanding this compact and creating new multi-regional dairy compacts. Dairy compacts provide a floor for Class I fluid prices and thus stabilize and enhance farm milk prices in compact regions. This analysis indi-

cates that multi-regional dairy compacts will result in clear economic tradeoffs between dairy farmers, processors, retailers, and consumers. While dairy farmers within the compact region may economically benefit from higher farm milk prices, processors, retailers and consumers in the compact region and dairy farmers outside the compact region will face economic losses.